

### Claims

1. (Currently Amended) A method of constructing a model operable to generate one or more job performance criteria predictions based on input pre-hire information, the method comprising:

electronically collecting pre-hire information from a plurality of applicants wherein at least some of the pre-hire information is collected from at least one of the applicants who responds directly on an electronic device;

collecting post-hire information for the applicants based on job performance of the applicants after hire, wherein collecting post-hire information comprises receiving payroll information for the applicants via a network, determining a termination date for an applicant from the payroll information received via the network, and determining tenure of the applicant by comparing the termination date with a hiring date of the applicant; and

from the pre-hire information and the post-hire information, generating an artificial intelligence-based predictive model in a computer-readable medium, wherein the artificial intelligence-based predictive model is operable to generate one or more job performance criteria predictions comprising tenure based on input pre-hire information from new applicants, whereby the one or more job performance criteria predictions are usable as a basis for a hiring recommendation or other employee selection information.

2. (Currently Amended) A computer-readable medium comprising computer-executable instructions for performing a method of constructing a model operable to generate one or more job performance criteria predictions based on input pre-hire information, the method comprising:

electronically collecting pre-hire information from a plurality of applicants;

collecting post-hire information for the applicants based on job performance of the applicants after hire, wherein collecting post-hire information comprises receiving payroll information for the applicants via a network, determining a termination

**date for an applicant from the payroll information received via the network, and determining tenure of the applicant by comparing the termination date with a hiring date of the applicant;** and

from the pre-hire information and the post-hire information, generating an artificial intelligence-based predictive model operable to generate one or more job performance criteria predictions **comprising tenure** based on input pre-hire information from new applicants.

3. (Canceled)

4. (Canceled)

5. (Original) The method of claim 1 further comprising:  
limiting the applicants for the model to those with a particular occupation; and  
constructing the model as an occupationally-specialized model.

6. (Original) The method of claim 1 wherein the model accepts one or more inputs, the method further comprising:  
identifying in the pre-hire information one or more characteristics that are ineffective predictors; and  
omitting the ineffective predictors as inputs to the model.

7. (Original) The method of claim 1 wherein the pre-hire information comprises one or more characteristics, the method further comprising:  
identifying in the pre-hire information one or more characteristics that are ineffective predictors; and  
providing an indication that the characteristics no longer need to be collected.

8. (Previously Presented) The method of claim 1 wherein job performance criteria predictions comprise a prediction indicating whether a job candidate will be voluntarily terminated.

9. (Previously Presented) The method of claim 1 wherein job performance criteria predictions comprise a prediction indicating whether a job candidate will be eligible for rehire after termination.

10. (Previously Presented) The method of claim 1 wherein the pre-hire information comprises one or more characteristics, the method further comprising:  
identifying in the pre-hire information one or more characteristics that are ineffective predictors;  
responsive to identifying the ineffective predictors, collecting new pre-hire information not including the ineffective predictors; and  
building a refined model based on the new pre-hire information.

11. (Original) The method of claim 10 further comprising:  
adding one or more new characteristics to be collected when collecting the new pre-hire information.

12. (Original) The method of claim 11 further comprising:  
evaluating the effectiveness of the new characteristics.

13. (Canceled)

14. (Canceled)

15. **(Currently Amended)** A method for constructing an artificial intelligence-based employment selection process based on pre-hire information comprising personal employee characteristics and post-hire information comprising employee job performance observation information, the method comprising:

generating a plurality of predictive artificial intelligence models based on the pre-hire and post-hire information, wherein at least two of the artificial intelligence models are of different **feed-forward** types **and different architectures**;

testing effectiveness of the models to select an effective model; and

applying the effective model to predict post-hire information not yet observed, whereby the post-hire information not yet observed that is predicted by the effective model can be a basis for a hiring recommendation or other employee selection information.

16. **(Canceled)**

17. **(Previously Presented)** The method of claim 15 wherein at least one of the models is an expert system.

18. **(Canceled)**

19. **(Canceled)**

20. **(Canceled)**

21. **(Original)** The method of claim 15 further comprising:  
identifying at least one of the models as exhibiting impermissible bias; and  
avoiding use of the models exhibiting impermissible bias.

22. (Canceled)

23. (Currently Amended) A computer-implemented method of refining an artificial-intelligence based employee performance selection system, the method comprising:

collecting information via an electronic device presenting a set of questions to employment candidates, wherein the questions are stored in a computer-readable medium;

collecting post-hire information for the employment candidates based on job performance of the employment candidates after hire, wherein collecting post-hire information comprises receiving payroll information for the employment candidates via a network, determining a termination date for an employment candidate from the payroll information received via the network, and determining tenure of the employment candidate by comparing the termination date with a hiring date of the applicant;

testing effectiveness of at least one of the questions in predicting ~~the post-hire information~~ tenure; and

responsive to determining the question is ineffective in predicting tenure, deleting the question from the computer-readable medium.

24. (Canceled)

25. **(Currently Amended)** A computer-readable medium comprising a predictive model, the model comprising:

inputs for accepting one or more characteristics based on pre-hire information for a job applicant; and

one or more predictive outputs indicating one or more predicted job effectiveness criteria based on the inputs,

wherein the predictive model is an artificial intelligence-based model constructed from pre-hire data electronically collected from a plurality of employees and post-hire data, and the model generates its predictive outputs based on the similarity of the inputs to pre-hire data collected for the plurality of employees and their respective post-hire data; and

wherein the one or more predicted job effectiveness criteria comprise at least one selected from the group consisting of:

~~tenure, number of accidents, sales level,~~ whether the job applicant will be involuntarily terminated, and whether the job applicant will be eligible for rehire upon termination, ~~sales produced, units produced, attendance, number of disciplinary incidents, dollar sales per hour, promotions, salary increases, probationary survival, and completion of training programs.~~

26. **(Original)** The computer-readable medium of claim 25 wherein the predictive model comprises a predictive output indicating a rank for the job applicant.

27. **(Original)** The computer-readable medium of claim 26 wherein the rank is relative to other applicants.

28. **(Original)** The computer-readable medium of claim 26 wherein the rank is relative to the plurality of employees.

29. (Original) The computer-readable medium of claim 25 wherein the predictive model comprises a predictive output indicating probability of group membership for the job applicant.

30. (Original) The computer-readable medium of claim 25 wherein the predictive model comprises a predictive output indicating predicted tenure for the job applicant.

31. (Canceled)

32. (Original) The computer-readable medium of claim 25 wherein the predictive model comprises a predictive output indicating predicted number of accidents for the job applicant.

33. (Original) The computer-readable medium of claim 25 wherein the predictive model comprises a predictive output indicating whether the applicant will be involuntarily terminated.

34. (Original) The computer-readable medium of claim 25 wherein the predictive model comprises a predictive output indicating whether the applicant will be eligible for rehire after termination.

35. (Canceled)

36. (Canceled)

37. **(Currently Amended)** A computer-readable medium comprising a refined predictive artificial intelligence-based model, the model comprising:

inputs for accepting one or more characteristics based on pre-hire information for a job applicant; and

one or more predictive outputs indicating one or more predicted job effectiveness criteria based on the inputs;

**wherein the one or more predictive outputs are configured to predict whether the job applicant will be involuntarily terminated or whether the job applicant will be eligible for rehire upon termination, and**

wherein the predictive model is constructed from pre-hire data electronically collected from a plurality of employees and post-hire data, wherein the pre-hire data is based on a question set refined by having identified and removed one or more questions as ineffective.

38. (Canceled)

39. (Canceled)



40. (Currently Amended) ~~The computer-readable medium of claim 25 incorporated into an~~ An apparatus for assisting in determining the suitability of an individual for employment by an employer, the apparatus comprising:

a computer-readable medium comprising a predictive model comprising:  
inputs for accepting one or more characteristics based on pre-hire  
information for a job applicant; and  
one or more predictive outputs indicating one or more predicted job  
effectiveness criteria based on the inputs, wherein the predictive model is an  
artificial intelligence-based model constructed from pre-hire data electronically  
collected from a plurality of employees and post-hire data, and the model generates  
its predictive outputs based on the similarity of the inputs to pre-hire data collected  
for the plurality of employees and their respective post-hire data; wherein the one  
or more predicted job effectiveness criteria comprise at least one selected from the  
group consisting of: whether the job applicant will be involuntarily terminated, and  
whether the job applicant will be eligible for rehire upon termination;

electronic data interrogator means for presenting a first set of a plurality of means for questioning to the individual;

electronic answer capturer means for electronically storing answers by the individual to at least a selected plurality of the first set of means for questioning presented to the individual;

electronic predictor means responsive to the stored answers and for predicting at least one post-hire outcome if the individual were to be employed by the employer, the predictor providing a prediction of the outcome based upon correlations of the stored answers with answers to sets of means for questioning by other individuals for which post-hire information has been collected;

electronic results provider means for providing an output indicative of the outcome to assist in determining the suitability of the individual for employment by the employer.

41. **(Currently Amended)** An apparatus for assisting in determining the suitability of an individual for employment by an employer, the apparatus comprising:

**means an electronic device** for presenting a first set of a plurality of means for questioning to the individual;

**means** for electronically storing answers by the individual to at least a selected plurality of the first set of means for questioning presented to the individual;

**means** responsive to the stored answers and for predicting at least one post-hire outcome if the individual were to be employed by the employer, the predictor providing a prediction of the outcome based upon correlations of the stored answers with answers to sets of means for questioning by other individuals for which post-hire information has been collected; and

**means** for providing an output indicative of the outcome to assist in determining the suitability of the individual for employment by the employer,

wherein the apparatus comprises a predictive model comprising:

**inputs** for accepting one or more characteristics based on pre-hire information for a job applicant; and

**one or more predictive outputs** indicating one or more predicted job effectiveness criteria based on the inputs,

wherein the predictive model is an artificial intelligence-based model constructed from pre-hire data electronically collected from a plurality of employees and post-hire data, and the model generates its predictive outputs based on the similarity of the inputs to pre-hire data collected for the plurality of employees and their respective post-hire data; and

wherein the one or more predicted job effectiveness criteria comprise at least one selected from the group consisting of:

~~tenure, number of accidents, sales level,~~ whether the job applicant will be involuntarily terminated, and whether the job applicant will be eligible for rehire upon termination, ~~sales produced, units produced, attendance, number of disciplinary incidents, dollar sales per hour, promotions, salary increases, probationary survival, and completion of training programs.~~

42. (Canceled)

43. (Currently Amended) The computer-readable medium of claim 37 wherein the ineffective questions are identified via an information transfer technique comprising:

considering various sets of permutations of answers to questions;  
evaluating whether the sets of permutations are effective; and  
determining whether an answer to a question is not in any effective set of  
permutations.

44. (New) The method of claim 1 wherein collecting post-hire information further comprises:

tracking whether the applicant has been dropped from payroll.

45. (New) The method of claim 21 wherein:

the identifying comprises comparing across gender, ethnicity, or age differences.